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WHAT IS CLAIMED IS:

1. A laser delivery system for ophthalmic surgery and the like comprising:

a handpiece having a handpiece body and a hollow tip of a size suitable for insertion into a human eye, said hollow tip extending distally from the handpiece body;

a laser connector for connection to a laser source;

an optical fiber terminating at the ¹¹⁵ proximal ¹¹² end in the laser connector and terminating at the ¹¹⁶ distal end in the handpiece for transmitting laser light from a laser source to an eye to be treated;

said optical fiber extending at least partially through the handpiece tip, said tip also including a fluid path from the ¹¹⁷ distal end thereof to the interior of the handpiece body;

said handpiece body having a fluid path in fluid communication with the fluid path of the tip, said handpiece body fluid path extending to the exterior of the handpiece, whereby fluid in the eye may flow through the tip and the handpiece body while laser light from the laser source is directed by the optical fiber into the eye.

2. The laser delivery system as set forth in claim 1 wherein the handpiece body fluid path includes a cavity inside the handpiece body and a port connecting said cavity to the exterior of the handpiece.

~~3. The laser delivery system as set forth in claim 1 further including means for refluxing material in the fluid path back into the eye.~~

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4. The laser delivery system as set forth in claim 3
wherein the handpiece body includes the refluxing means.

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5. The laser delivery system as set forth in claim 3
wherein the refluxing means includes an elastically deformable
member for exerting pressure on the fluid in the fluid path to
push said material out of the tip back into the eye.

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6. The laser delivery system as set forth in claim 3
wherein the refluxing means is manually operable.

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7. The laser delivery system as set forth in claim 3
wherein the refluxing means includes a deformable sleeve disposed
axially along the handpiece.

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8. The laser delivery system as set forth in claim 3
wherein the deformable sleeve is disposed over a substantially
rigid, tubular member, said tubular member having an orifice
therethrough into which a portion of the sleeve may be pushed to
exert pressure on the fluid in the fluid path.

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9. The laser delivery system as set forth in claim 3
wherein the deformable sleeve has a port formed therein over the
orifice, said port forming a portion of the fluid path to the
exterior of the handpiece.

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10. The laser delivery system as set forth in claim 3
wherein the deformable sleeve includes a hollow protrusion
extending from the body of the sleeve, said hollow protrusion
being in fluid communication with the interior of the sleeve and
serving as a locator of the reflux means.

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11. The laser delivery system as set forth in claim 3
wherein the refluxing means includes a deformable bulb extending
outwardly from the handpiece.

12. The laser delivery system as set forth in claim 3
wherein the refluxing means includes means for simultaneously
closing the fluid path through the handpiece upon operation of
the refluxing means.

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13. The laser delivery system as set forth in claim 1
wherein the handpiece body fluid path includes a cavity inside
the handpiece body, a bore extending from the cavity to the
exterior of the handpiece, and a tube for providing fluid
communication between the bore and a suction source.

14. The laser delivery system as set forth in claim 1
wherein the optical fiber is fixedly secured to the handpiece
body and is otherwise loosely disposed in the handpiece tip.

15. The laser delivery system as set forth in claim 1
further including means for removably securing an intermediate
portion of the optical fiber in a fixed position with respect to
an operating field.

16. The laser delivery system as set forth in claim 3
wherein the refluxing means includes a resilient tube, a portion
of which is disposed externally of the handpiece intermediate the
ends of the handpiece, said exposed portion of the resilient tube
being disposed such that the user may press upon the resilient
tube during use of the handpiece.

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17. A laser delivery system for ophthalmic surgery and the like comprising:

a handpiece having a handpiece body and a hollow tip of a size suitable for insertion into a human eye, said hollow tip extending distally from the handpiece body;

a laser connector for connection to a laser source;

an optical fiber terminating at the proximal end in the laser connector and terminating at the distal end in the handpiece for transmitting laser light from a laser source to an eye to be treated; and

means for removably securing an intermediate portion of the optical fiber in a fixed position with respect to an operating field.

16 18. The laser delivery system as set forth in claim 17
wherein the removably securing means is a clamp. 15

17 19. The laser delivery system as set forth in claim 18
wherein the clamp is a one-piece plastic molded part.

20. The laser delivery system as set forth in claim 17
wherein the optical fiber extends at least partially through the handpiece tip, said tip also including a fluid path from the distal end thereof to the interior of the handpiece body, and wherein the handpiece body has a fluid path in fluid communication with the fluid path of the tip, said handpiece body fluid path extending to the exterior of the handpiece, whereby fluid in the eye may flow through the tip and the handpiece body while laser light from the laser source is directed by the optical fiber into the eye.

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21. The laser delivery system as set forth in claim 17
further including means for refluxing material in the fluid path
back into the eye. ✓

20 22. The laser delivery system as set forth in claim 21 ✓
wherein the handpiece body includes the refluxing means. ✓

21 23. The laser delivery system as set forth in claim 21 ✓
wherein the refluxing means includes an elastically deformable
member for exerting pressure on the fluid in the fluid path to
push said material out of the tip back into the eye. ✓

22 24. The laser delivery system as set forth in claim 21 ✓
wherein the refluxing means is manually operable. ✓

23 25. The laser delivery system as set forth in claim 21 ✓
wherein the refluxing means includes a deformable sleeve disposed
axially along the handpiece. ✓

24 26. The laser delivery system as set forth in claim 25 ✓
wherein the deformable sleeve is disposed over a substantially
rigid, tubular member, said tubular member having an orifice
therethrough into which a portion of the sleeve may be pushed to
exert pressure on the fluid in the fluid path. ✓

25 27. The laser delivery system as set forth in claim 21 ✓
wherein the refluxing means includes a deformable bulb extending
outwardly from the handpiece. ✓

26 28. The laser delivery system as set forth in claim 21 ✓
wherein the refluxing means includes means for simultaneously
closing the fluid path through the handpiece upon operation of
the refluxing means. ✓

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29. The laser delivery system as set forth in claim 17
wherein the optical fiber is fixedly secured to the handpiece
body and is otherwise loosely disposed in the handpiece tip.

30. A method of performing ophthalmic surgery
comprising:

inserting the distal end of a probe into the interior of
an eye;

aspirating material out of the interior of the eye
through the probe;

applying laser energy through the probe into the
interior of the eye, without replacing said probe. 102/103

31. The method as set forth in claim 30 wherein the
material is subretinal fluid which is aspirated out of the eye
through the probe. 112 411

32. The method as set forth in claim 31 wherein
additional subretinal fluid accumulates during the surgery,
further including the steps of aspirating the additional
subretinal fluid after first application of laser energy,
followed by additional application of laser energy after said
additional subretinal fluid is aspirated, without replacing said
probe.

33. The method as set forth in claim 30 further
including the step of simultaneously aspirating blood from the
interior of the eye and coagulating surface bleeding using laser
energy.

Spk 34. The method as set forth in claim 30 further including the step of infusing medication through the probe into the eye during surgery.

Spk 29 35. The method as set forth in claim 34 *28* wherein the medication is a blood clotting factor, said step of infusing medication thereby including the step of clotting blood at the site where the medication is infused.

Spk 33? 36. The method as set forth in claim 30 further including the step of delivering an adhesive through the probe into the interior of the eye and activating the adhesive by the application of laser energy through the probe.